REMARKS

This is a full and timely response to the non-final Office Action dated November 8, 2002. Reexamination and reconsideration in light of the above amendments and the following remarks are courteously requested.

Claims 1, 5, 10-14, 17-42 are pending in this application, with claims 1 and 19 being independent.

Claims 19-34 were withdrawn from consideration by the Examiner as being drawn to an invention that has been non-elected with traverse.

No new matter is added.

Rejections under 35 U.S.C. 103

Claims 1-4, 6-17, 35, 38-41 were rejected under 35 U.S.C. 103 as allegedly being obvious over U.S. Patent 5,972,459 issued to Kawakubo et al. (Kawakubo) in view of U.S. Patent No. 6,166,856 issued to Araki et al. (Araki) further in view of U.S. Patent No. 5,635,267 issued to Yamada et al. (Yamada).

Claims 5 and 18 were rejected under 35 U.S.C. 103 as allegedly being obvious over Kawakubo in view of Araki in view of Yamada and in further view of U.S. Patent No. 5,614,287 issued to Sekiya et al. (Sekiya).

These rejections are respectfully traversed for at least the above reasons and the following reasons.

Within the claims as amended, the light transmission flattenable film consists of inorganic flattenable material having a thickness that is 400 nm or less.

Kawakubo arguably discloses an optical recording medium having a light transmission flattenable film 205 (figures 2, 7). However, Kawakubo fails to disclose, teach or suggest the light transmission flattenable film 205 as consisting of inorganic flattenable material having a thickness that is 400 nm or less. Instead, Kawakubo arguably teaches a polycarbonate light transmissive layer 205 having a thickness of 100 μm (column 10, lines 56-58). Thus, all claimed features are not found within Kawakubo.

The Office Action contends that "the optical recording medium having protrusions eliminated that damage an optical system disposed in the proximity of and in opposition to the surface of the light recording medium and performs the irradiation of light is a product by process. Additionally, the formation temperature is a product by process."

In response to this contention, "a product-by-process claim merely uses one statutory class of invention (i.e., process limitations) to define or fingerprint another statutory class (i.e., the product) which is not readily susceptible to definition solely by structure or physical characteristics." *Ex parte Lyell*, 17 USPQ2d 1548, 1552 (Bd. Pat. App. & Int. 1990).

However, the features noted above are not process steps, but instead, are physical characteristic of the materials. *Physical characteristics are not process steps*. As a result, and the mischaracterization of the features noted above as product-by-process claims is improper. "All claim features must be considered." *Ex parte Petersen*, 228 USPQ 217, 218 (Bd. Pat. App. & Int. 1985). Exclusion of the features noted above from consideration is, likewise, improper.

The Office Action cites Araki for the features deficient within Kawakubo. "In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of the applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992)(reversing non-analogous art rejection due to improperly combined references). "The determination that a reference is from a nonanalogous art is therefore two-fold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved." *In re Deminski*, 230 USPQ 313, 315 (Fed. Cir. 1986).

While the Kawakubo discloses an optical recording medium, Araki is related to an electroluminescent device. Because the claimed invention is related to an optical recording medium, whereas Araki is related to an electroluminescent device, Araki is not within the field of the Applicant's endeavor.

The Office Action contends that Araki teaches that projections 21 of Araki form a plurality of sealed cells 23

(figure 1, column 2, lines 54-61). But in this regard, Araki fails to reasonably pertinent to the particular problem with which the inventor was concerned. As a result, Araki is non-analogous art.

"There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself." *In re Oetiker*, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992). Yet, the Office Action fails to show why the skilled artisan would have been motivated to use the electroluminescent display of Araki to modify the optical recording medium of Kawakubo.

Yamada arguably discloses a light transmission flattenable film 8 (figures 1A-D) or a light transmission flattenable film 9 (figure 2). However, fails to disclose a light transmissive layer made of inorganic material. Instead, Yamada teaches adhesive layer 8 as ultraviolet-hardening resin or hot-melt type material (column 12, lines 62-64 and column 23, lines 39-41). Moreover, Yamada fails to teach a polishing process of a light transmission flattenable film of a optical recording medium. Thus, all features are not found within Yamada.

Sekiya arguably discloses a light transmission flattenable film 19. However, Sekiya fails to disclose, teach or suggest a light transmissive layer 19 made of inorganic material. Instead, Sekiya describes layer 19 as an organic protection layer (column 11, lines 6-7).

Withdrawal of these rejections and allowance of the claims is respectfully requested.

Conclusion

For the foregoing reasons, all the claims now pending in the present application are allowable, and the present application is in condition for allowance. Accordingly, favorable reexamination and reconsideration of the application in light of the amendments and remarks is courteously solicited.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone Brian K. Dutton, Reg. No. 47,255, at 202-955-8753 or the undersigned attorney at the below-listed number.

If any fee is required, the Commissioner is hereby authorized to charge the fee to Deposit Account # 18-0013.

Respectfully submitted,

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APPENDIX

IN THE CLAIMS

Please cancel claims 2-4, 6-9 and 15-16 without prejudice or disclaimer of their underlying subject matter.

Please amend the claims as follows.

1. (amended) An optical recording medium for performing at least one of recording and reproduction of information by irradiation of light, comprising;

on a substrate with fine concavities and convexties formed on a surface thereof on a side onto which said irradiation of light is performed a formed film layer the surface of which is made a surface of fine concavities and convexties representing said fine concavities and convexties and which has at least a recording layer; and

a light transmission flattenable film which buries therein the fine concavities and convexities surface, and which has a transmission characteristic with respect to the irradiated light, and which has its surface polished and has a hardness enabling it to be polished,

wherein said light transmission flattenable film consists of inorganic flattenable material having a thickness that is 400 nm

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or less ~~includes a backing layer, a light transmission flattenable layer and a surface layer, said backing layer being above said formed film layer, said light transmission flattenable layer being above said backing layer, and said surface layer being above said light transmission flattenable layer~~.

2-4. (canceled).

5. (amended) The optical recording medium according to claim 1, wherein the substrate consists of organic material substrate made of polyether sulfone (PES) or polyether imide (PEI)~~; and~~

~~the light transmission flattenable film consists of film-forming material the formation temperature of which is 150°C or less~~.

6-9. (canceled).

10. (amended) The optical recording medium according to claim 1, wherein the thickness of the light transmission flattenable film is ~~made~~ 100 nm or less.

11. The optical recording medium according to claim 1, wherein the light transmission flattenable film consists of spin-coat flattenable material having SiO_2 as a main component.

12. The optical recording medium according to claim 1, wherein the light transmission flattenable film has a level of flatness by having protrusions eliminated that damage an optical system disposed in the proximity of and in opposition to the surface of the light recording medium and performs the irradiation of light.

13. The optical recording medium according to claim 1, wherein the fine concavities and convexities have lands and grooves;

the difference in level between the land and the groove is selected to be at a value which only causes mutual interaction between these two to less occur with respect to the irradiated light; and

the recording of the information is performed with respect to the recording layer of either, or both, of the land and the groove.

14. (amended) The optical recording medium according to claim ~~1~~42, wherein a backing layer of dielectric material is formed on a surface where the light transmission flattenable film is formed.

15-16. (canceled).

17. The optical recording medium according to claim 1, wherein the recording layer has a material layer the phase of which is changed by the irradiation of light from an amorphous state of low reflectance to a crystalline state of high reflectance or vice versa.

18. An optical recording medium according to claim 1, wherein the recording layer has a material layer the state of magnetization of which is changed by the irradiation of light.

19. A manufacturing method of an optical recording medium for performing at least one of recording and reproduction of information by irradiation of light, comprising:

a manufacturing step of manufacturing a substrate having fine concavities and convexities formed on the surface thereof on a side onto which the irradiation of light is performed;

a forming step of forming a formed film layer the surface of which is made a fine concavities and convexities surface reflecting the fine concavities and convexities on itself and which has at least a recording layer;

a forming step of forming a light transmission flattenable film which has buried in the formed film layer the fine concavities and convexities surface, and which has a transmission characteristic with respect to the irradiated light, has its surface polished and has a hardness enabling it to be polished; and

a polishing step of polishing at least the surface of the light transmission flattenable film.

20. The manufacturing method of an optical recording medium according to claim 19, wherein before executing the forming step of forming the light transmission flattenable film there is executed a step of eliminating or truncating protrusions on the surface of the substrate.

21. The manufacturing method of an optical recording medium according to claim 19, wherein the polishing step is a flying tape polish (FTP) step.

22. The manufacturing method of an optical recording medium according to claim 19, wherein in the forming step of the formed film layer there is executed a step of forming a reflection film on the substrate.

23. The manufacturing method of an optical recording medium according to claim 19, wherein the forming step of the formed film layer uses a method of forming a film by sputtering.

24. The manufacturing method of an optical recording medium according to claim 19, wherein the formation of the light transmission flattenable film is performed at a temperature of 150°C or less.

25. The manufacturing method of an optical recording medium according to claim 19, wherein the substrate is formed using an organic substrate material; and

the formation of the light transmission flattenable film is performed at a temperature of 150°C or less.

26. The manufacturing method of an optical recording medium according to claim 19, wherein the formation of the light

transmission flattenable film is performed using a spin-coating method of inorganic material.

27. The manufacturing method of an optical recording medium according to claim 19, wherein the formation of the light transmission flattenable film is performed to a thickness of 400 nm or less.

28. The manufacturing method of an optical recording medium according to claim 19, wherein the formation of the light transmission flattenable film is performed to a thickness equal to or smaller than the thickness of the formed film layer.

29. The manufacturing method of an optical recording medium according to claim 19, wherein the light transmission flattenable film is formed using a spin-coating method of performing spin-coating with respect to a flattenable material having SiO2 as a main component.

30. The manufacturing method of an optical recording medium according to claim 19, wherein the fine concavities and convexities have lands and grooves;

the difference in level between the land and the groove is selected to be at a value which only causes mutual interaction between these two to less occur with respect to the irradiated light; and

the recording layer of either, or both, of the land and the groove is used as a recording portion of the information.

31. The manufacturing method of an optical recording medium according to claim 19, wherein after executing the forming step of the formed film layer having at least the recording layer there is executed the forming step of the light transmission flattenable film via a step of forming a dielectric backing layer on the surface of the formed film layer.

32. The manufacturing method of an optical recording medium according to claim 19, wherein after executing the forming step of the formed film layer having at least the recording layer there is executed the forming step of the light transmission flattenable film via a step of forming a dielectric backing layer on the surface of the formed film layer; and

the dielectric backing layer is formed using a material layer to enhance the surface hardness of the optical recording medium.

33. The manufacturing method of an optical recording medium according to claim 19, wherein the recording layer is formed using a material layer the phase of which is changed by the irradiation of light from an amorphous state of low reflectance to a crystalline state of high reflectance or vice versa.

34. The manufacturing method of an optical recording medium according to claim 19, wherein the recording layer is formed using a material layer the state of magnetization of which is changed by the irradiation of light.

35. The optical recording medium according to claim 1, wherein said light transmission flattenable film is capable of being polished.

36. (amended) The optical recording medium according to claim ~~1~~42, wherein said backing layer is a first dielectric, said light transmission flattenable layer is a second dielectric, and said surface layer is a third dielectric.

37. The optical recording medium according to claim 36, wherein said first dielectric, said second dielectric and said third dielectric are the same dielectric.

38. (amended) The optical recording medium according to claim ~~1~~42, wherein said light transmission flattenable film is on said formed film layer.

39. The optical recording medium according to claim 38, wherein said backing layer is on said formed film layer, said light transmission flattenable layer is formed on said backing layer, and said surface layer is on said light transmission flattenable layer.

40. The optical recording medium according to claim 1, wherein said formed film layer includes a reflection film, a first dielectric film and a phase change recording layer.

41. The optical recording medium according to claim 40, wherein said reflection film is formed on said substrate, said first dielectric film is formed on said reflection film, and said phase change recording layer is formed on said first dielectric film.

Please add the following new claims.

42. (new) The optical recording medium according to claim 1, wherein said light transmission flattenable film includes a backing layer, a light transmission flattenable layer and a surface layer, said backing layer being above said formed film layer, said light transmission flattenable layer being above said backing layer, said surface layer being above said light transmission flattenable layer.